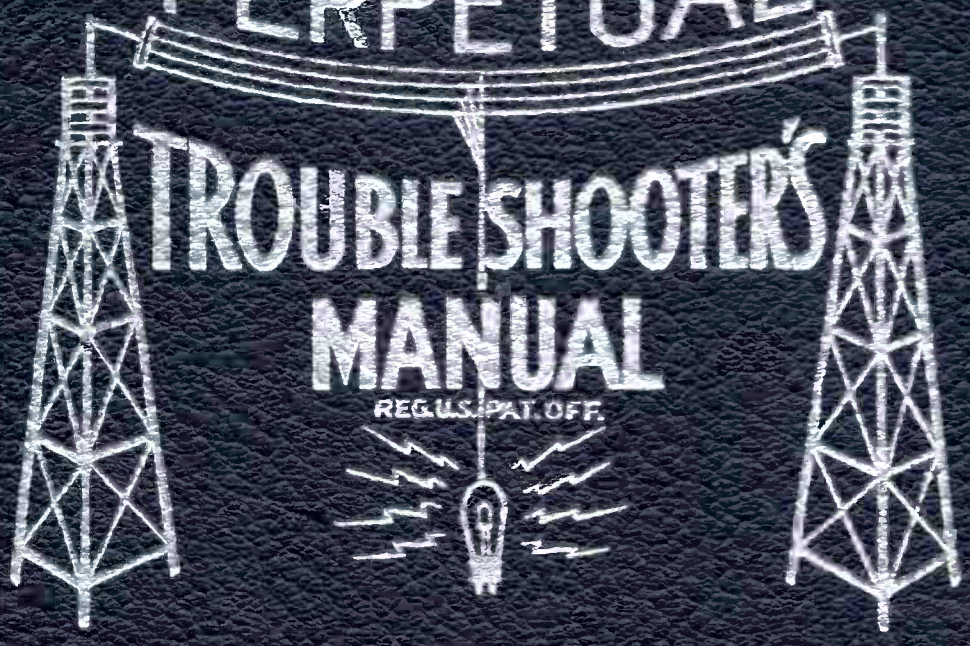
VOLUME IX

PERPETUAL TROUBLE SHOOTER'S MANUAL

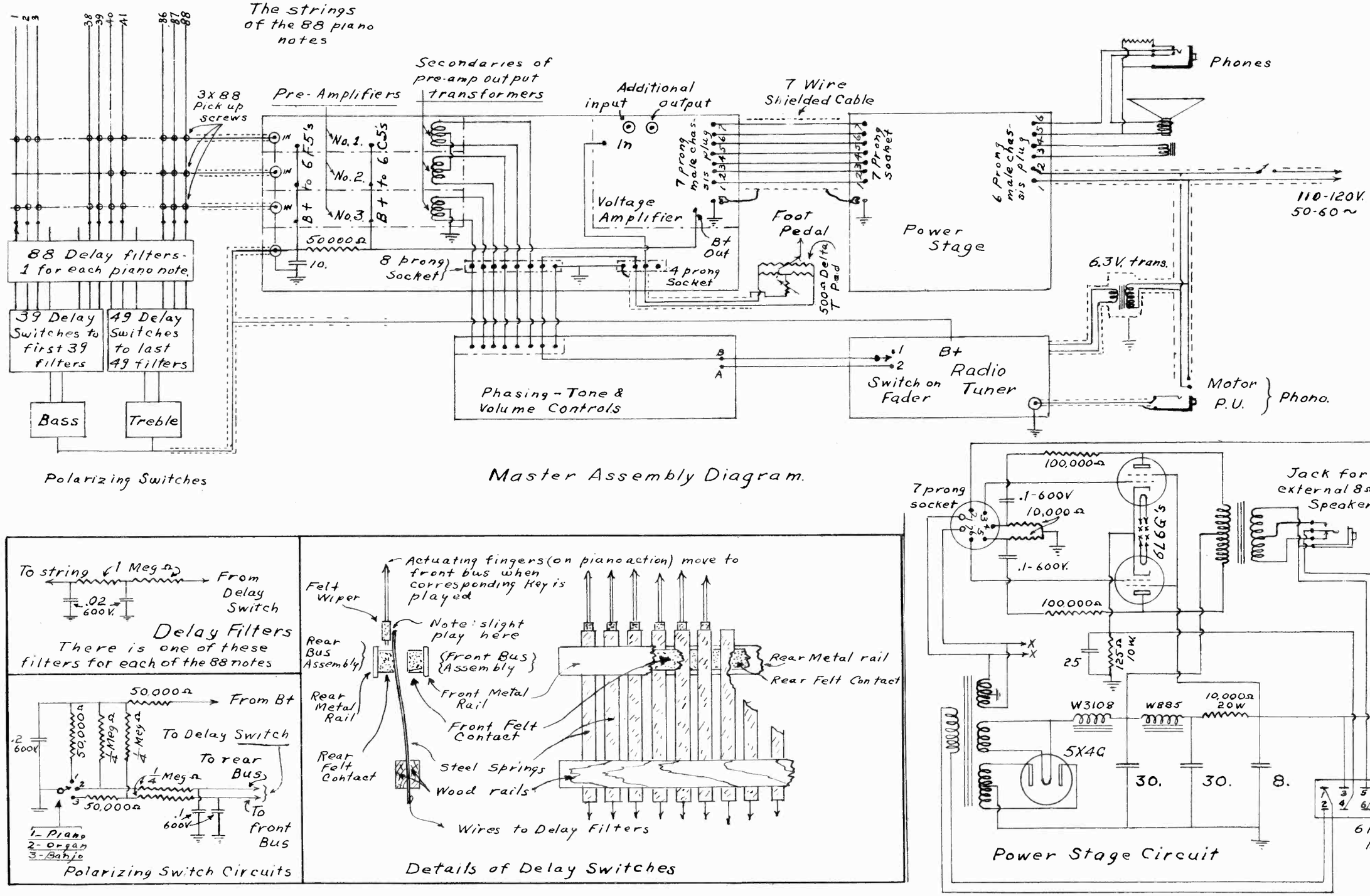
REG. U.S. PAT. OFF.



JOHN F. RIDER

KRAKAUER BROS.

MODEL PR3-P03
Super Electone Piano
Wiring Assembly, Delay Switches Details
Polarizing Switch and Power Stage Circuits

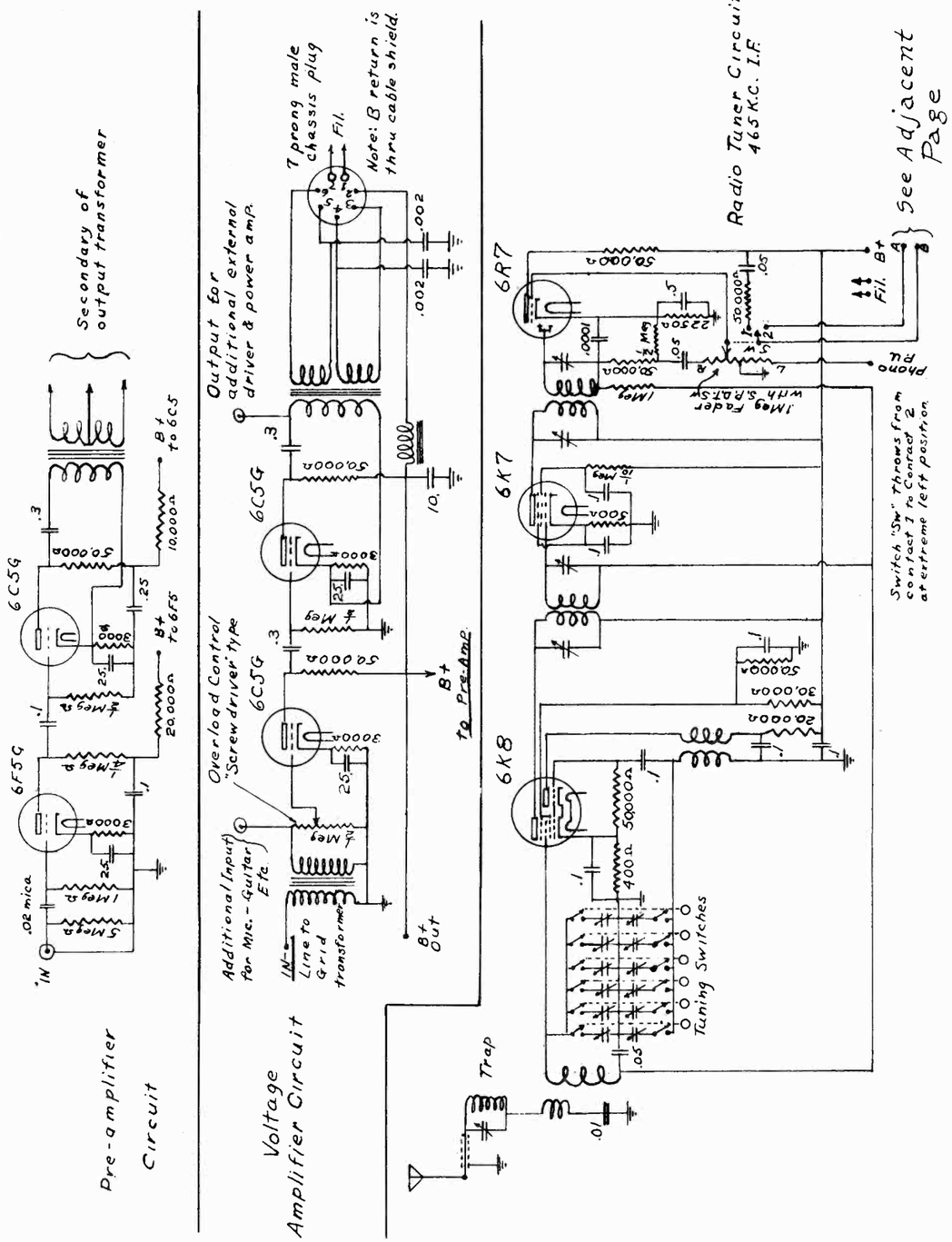


Polarizing Switches

Master Assembly Diagram.

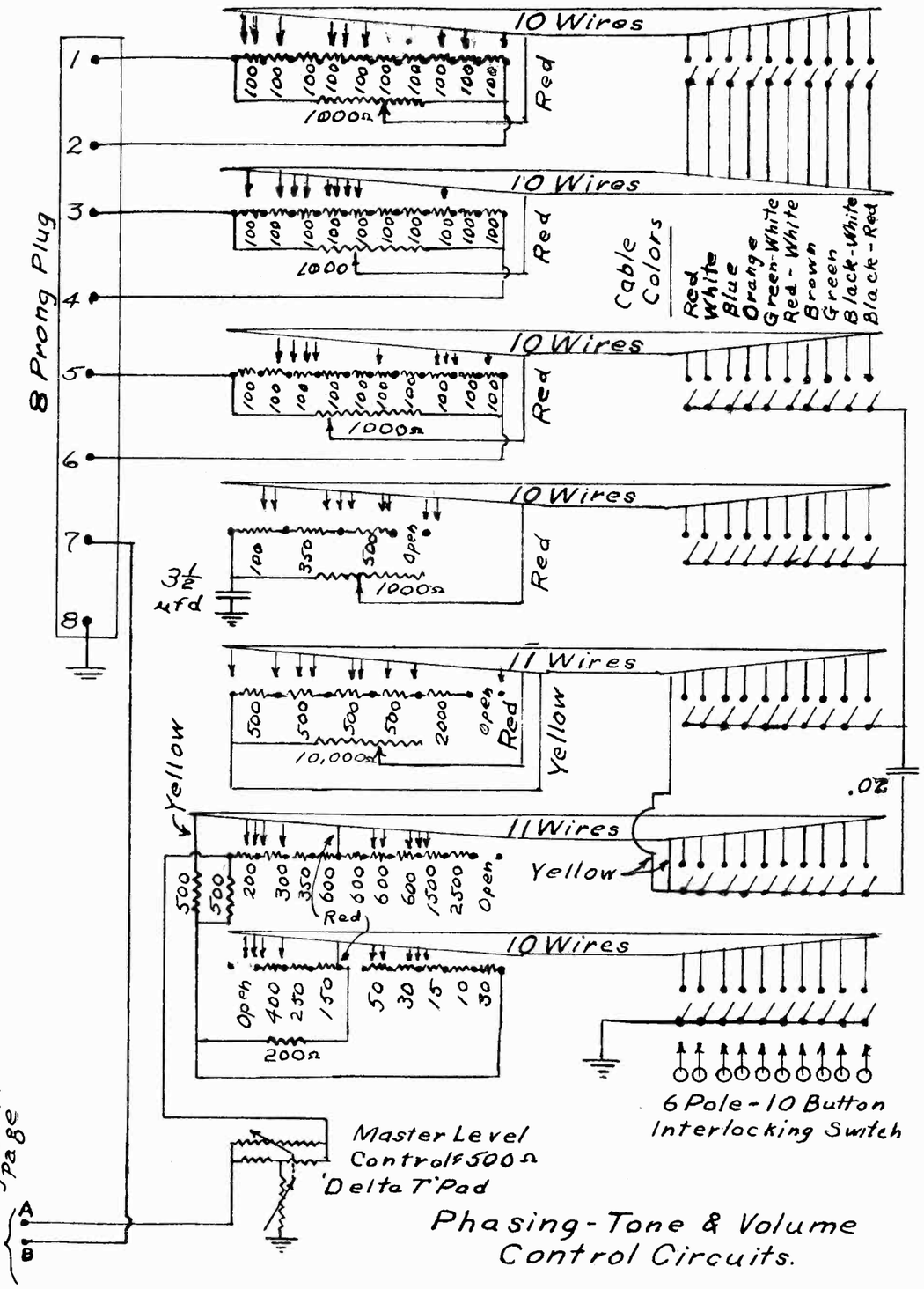
KRAKAUER BROS.

MODEL PR3-P03
Pre-Ampl. and Ampl. Circuits
Radio Tuner Circuit



MODEL PR3-P03
Phasing-Tone and
Volume Cont. Circuits

KRAKAUER BROS.



KRAKAUER BROS.

KRAKAUER ELECTONE
MODEL PR3-PO3

Service Notes

SETTING-UP OF TONE CONTROLS: Due to variations in the case design of pianos, the components will be located in different positions in different instruments; however, each of the controls which comes to the attention of the serviceman will be plainly marked. The controls will be positioned either directly under the top cover of the piano or in back of the lower section underneath the keyboard. If in the latter position, the lower front board of the piano can be removed by releasing a simple spring catch at the center of its top edge.

Turn on the power and set the left end push-button of the tone control switch. This connects the three phasing control potentiometers and the two (bass and treble) tone control potentiometers. Following the accompanying diagram and the customer's general desire as to whether a basically thick or thin tone is wanted, try various settings of the five controls mentioned above until the customer is satisfied. Select the button which this tone is to be set up on permanently. Take the corresponding color coded wire at each of the resistance banks opposite each of the five potentiometers and connect each wire to the resistor numbered the same as the nearest mark to the pointer of its potentiometer. When making these set-ups,the polarizing switch circuits should be set to that one of the three positions (piano, organ or banjo) which the customer expects to use most with this particular tone. Do not set-up the basic "regular" piano tone at this time. Do not set the volume control on the push-buttons until later.

When all tones other than the regular piano tone are set up, this tone quality can then be set in the following way: Phasing control No. 1 at 10, Phasing control No. 2 at B (which is the balanced or "no response" position), Phasing control No. 3 at B, Treble cut tone control at 1000, and Bass cut tone control between 3,000 and 10,000 - as the customer's ear dictates. The controls are left in this position so that the left-hand button is always "Regular Piano Tone".

The pre-set volume control may now be adjusted. The two red wires (left-hand button) should be placed on the sixth connection of each of the volume control banks. Press the other buttons in order and set the pairs of wires corresponding to these buttons so that the volume of each setting is equal to the volume of button No. 1. As this is a constant impedance type level control it is necessary to set both the wires of a pair to the same resistor in the respective banks. That is, with one wire of a button set to, say resistor No.5, then the other wire from this button must also be set to resistor No. 5 on its bank.

GROUNDING AND BONDING: If oscillation is present in the amplifiers it is probably due to defective grounding of the components or bonding of the shields. Another cause is an open grid connection. ALL SHIELDS, CHASSIS, TRANSFORMER CORES, SPEAKER FRAME, AND OTHER ELECTRICAL COMPONENTS MUST BE FIRMLY GROUNDED. Oscillation above audio frequencies is often the result of apparent speaker rattles. This can be checked by using the head-phones to determine if the rattle is in the speaker or the amplifier. In case of oscillation the condensers across the secondary of the driver transformer (which is in the pre-amplifier) may be at fault.

Rattles occurring when the pedals are used or on mechanical disturbance, such as pressing on the piano top, pressing down (not striking) the keys, slapping the side of the instrument, etc., are usually caused by bad bonding between any two touching conducting objects in the instrument. This is not confined to the electrical circuits alone but may be, for example, between one of the piano action brackets and its supporting bolt. Perseverance is the only way to find the trouble and bonding is the cure.

POLARIZING CIRCUIT TROUBLES: Terrific clicks when a key is pressed or struck is usually due to an open ground on its delay filter condensers. If the trouble is on all keys, it is probably an open ground wire to the common bus at the ground end of these condensers.

A short of a piano string to ground may be tested with a 1000-ohm per volt voltmeter which should read 0.2 volt on the 10-volt scale or 0.3 volt on the 15-volt scale, when connected between the string and ground, the string being positive. Low voltage indicates a short, providing the corresponding delay switch is not open and the polarizing switch is on "banjo".

The delay switch arms should normally lay against the rear bus. Each should have a slight play between itself and its actuating finger. Bend the finger to adjust. The resistance between the arm and the bus (both front and rear, as the key is up or down respectively) should be between 20,000 and 100,000 ohms. The exact resistance is not important, but if too high the associated note will "speak" with low level and if too low the note will "speak" with a dull thump or thud (associated with its tone) when the polarizing switch is on "organ". If the resistance is too low file away some of the felt on the bus (at the point of contact) using a strip of coarse sandpaper for a file. If the resistance is too high apply a tiny drop of "Aquadag" (colloidal graphite) desolved in ammonia to form a thin liquid. Allow to dry and repeat if necessary. Small quantities of "Aquadag" are available from Krakauer Bros. at One Dollar per ounce (enough for many jobs). Larger q uantities should be obtained from the Acheson Graphite Co.

DIRT IN PICK-UPS: Dirt or felt fibres will cause temporary grounds or shorts between pick-up screws and the strings. It causes rattles, hisses, or squeals when the polarizing switches are on "piano" or "banjo" which are absent or lessened in the "organ" position. The trouble can be localized to the treble or bass as the corresponding polarizing switches are thrown to the above positions. This trouble is differentiated from a string short, which often acts like it, by the voltage test mentioned under "Polarizing Circuit Troubles". It is unlikely that a piece of good conductor would lie between the strings and the pick-ups without being quickly displaced.

Removal of dirt can often be accomplished by just striking the keys smart blows and the accompanying vibration of the string will shake the dirt loose. More stubborn cases require blowing with a blower. A vacuum cleaner usually has a blower attachment which should be run for a few minutes before directing its air stream into the piano so as to clean out old dust from the hose or more dirt will be blown into the piano than will be blown out. Do not blow with your breath as the moisture will increase the trouble.

HUM: Outside of the usual causes of hum in an amplifier the only trouble to expect is from bad shielding, bonding, or grounding. Before anything else, make sure that the ground wire from the ground post on the back of the instrument really connects to a good ground. A loose grid cap, a defective (open) overload control, or other open low level grid circuits will also cause hum.

MISCELLANEOUS: The overload control should not be set to permit playing much louder than an ordinary mechanical piano. Do not trust the player to cut down with the master level control. If the customer wants louder response an external speaker is necessary to avoid feed-back. Use only a special piano speaker of 8 ohms impedance and which has SPECIAL CONE MATERIAL. These are available only from Krakauer Bros. or the Jensen Radio Company will make them to order.

The sprocket on the swell pedal control should engage the chain in such a manner that the swell pedal is one link from full on when the pedal is in the full loud position. Never set this control so that the player's foot can force the arm against its stop inside the control.

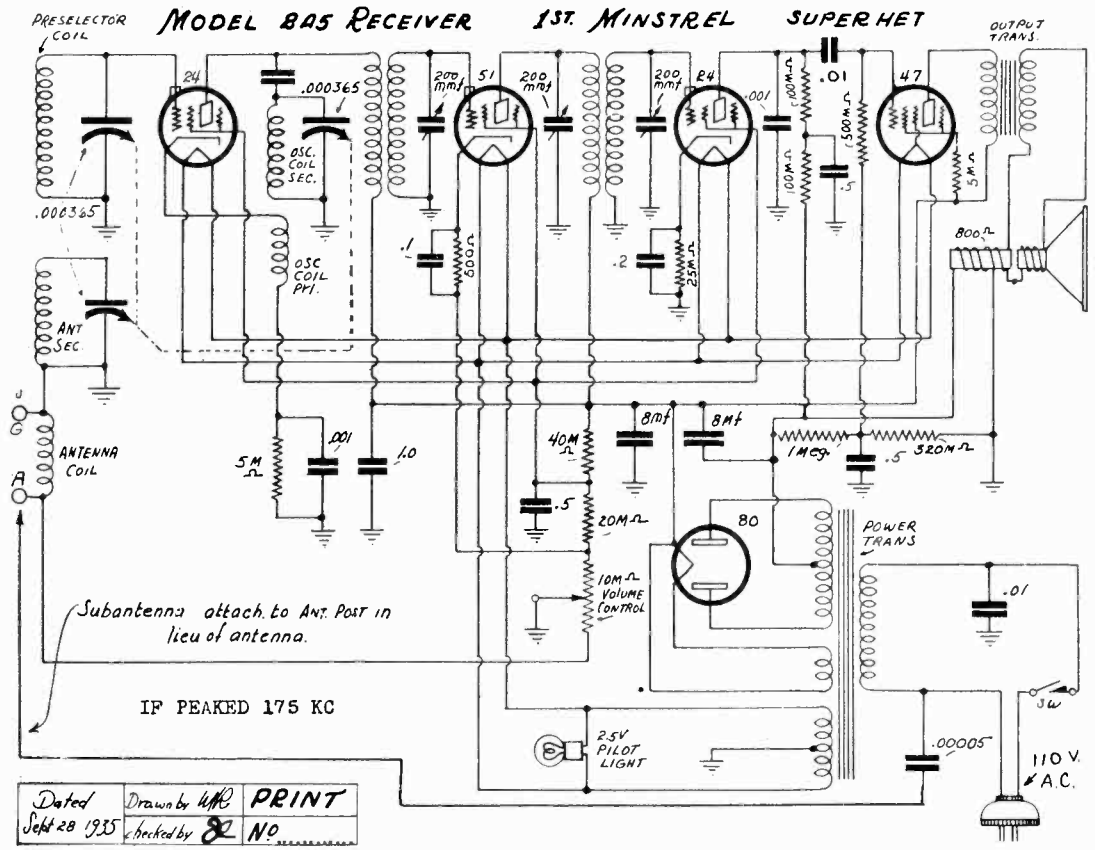
Except in the case of major damage, rebuilding of the instrument, or tampering, the pick-up screws should NEVER need adjustment. If the tone quality varies from one note to another, adjustment of these screws is indicated. Information on how to adjust these screws will be given by mail only by Krakauer Bros., 191 Cypress Avenue, New York City on receipt of a detailed letter from the serviceman giving the cause for the need of readjustment. Do not attempt to touch these screws without such detailed instructions, as adjustment requires the aid of a competent piano tone regulator and a peculiar technique which, while simple, must be explained, as the little trick of this technique will never be guessed by an uninformed person. This may seem at variance with the data given in Rider's Volume VIII, but the two additional pickups on each set of strings make this necessary.

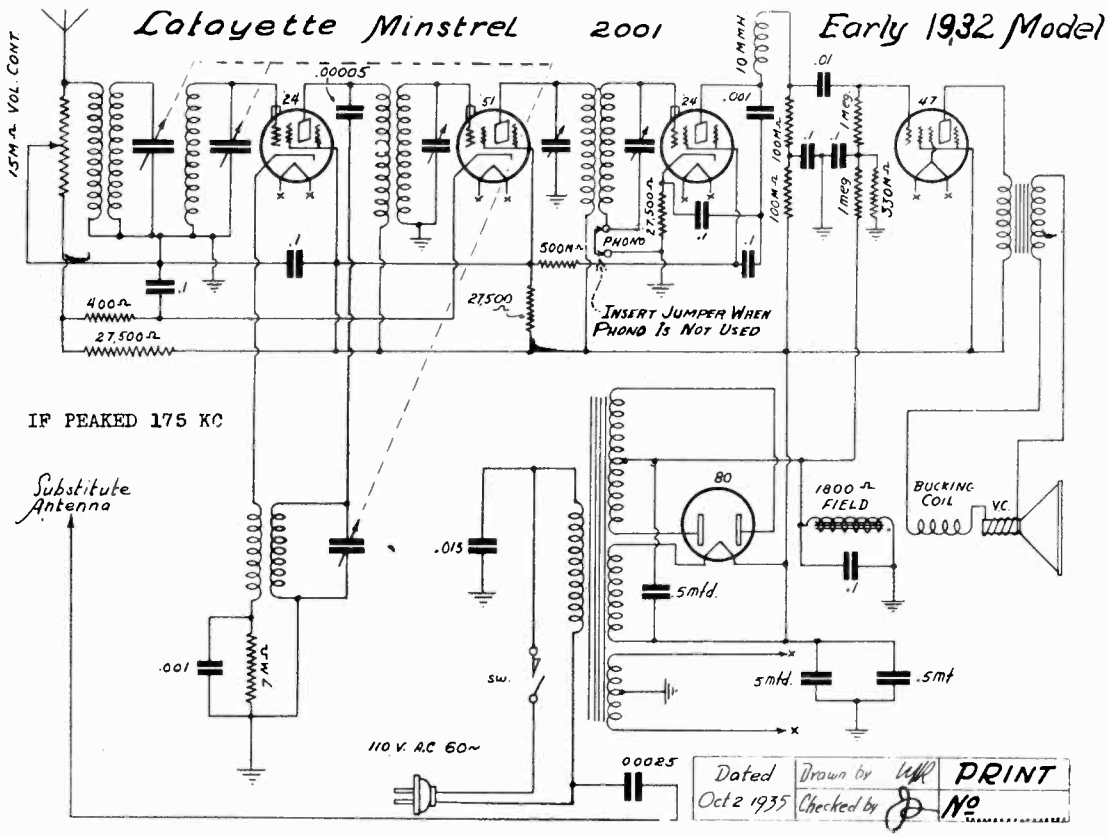
Let the service man be warned not to attempt mechanical adjustments to the piano (mechanical) mechanism as these are very delicate, some being as close as 2/1000 inch and require years of training to gain the requisite skill. The push-button radio receiver, shown here as an integral part of the instrument, is optional and may or may not be in the piano you service. The frequencies covered by each push-button will be plainly marked at the adjusting screws and their setting is conventional.

For additional information on the Electone Piano, see the special sections of Rider's Volumes VIII and IX.

LAFAYETTE RADIO MFG. CO.

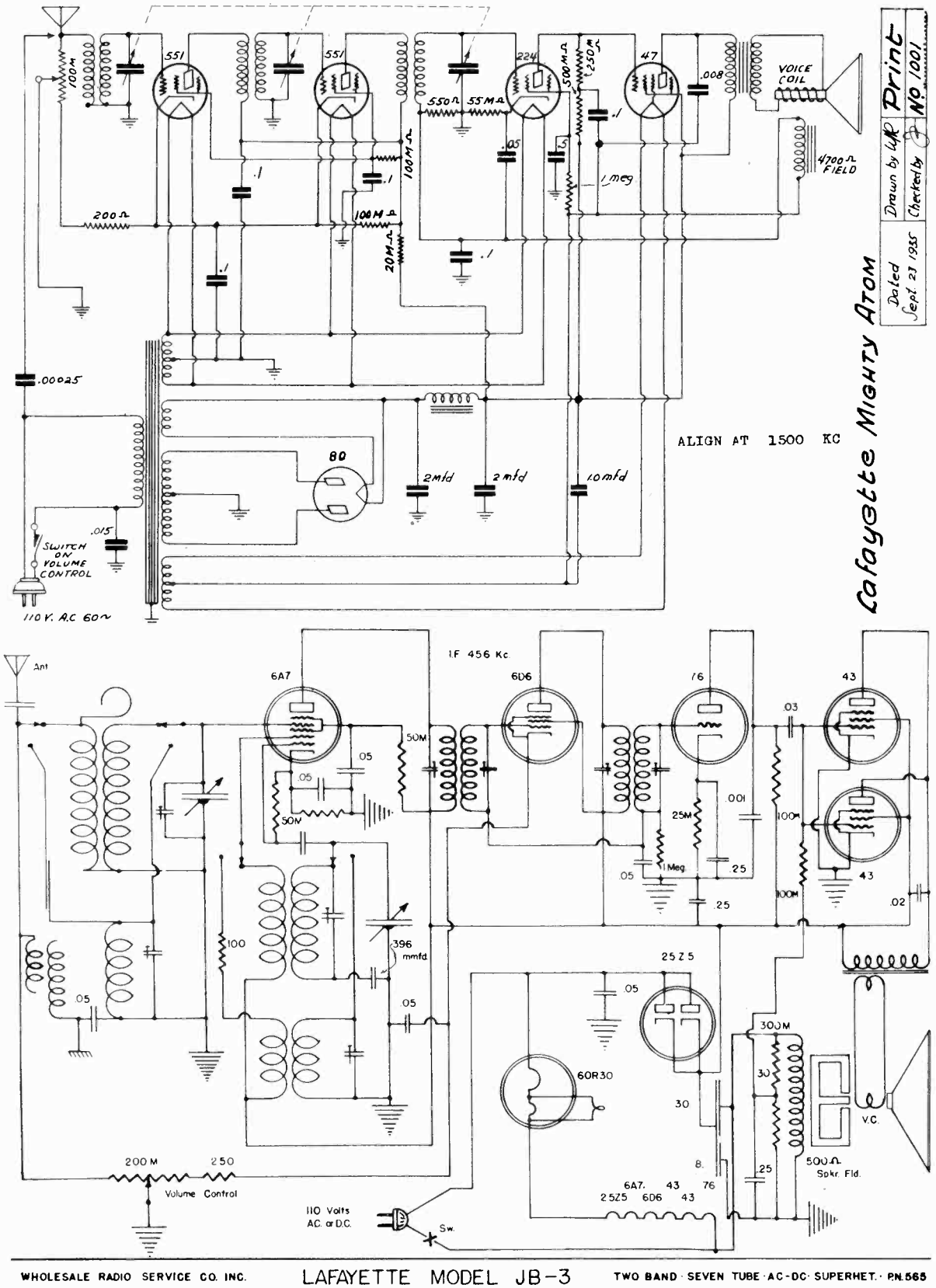
MODEL 2A5, 1st Minstrel
MODEL 2001, Minstrel (1932)
Schematics





MODEL Mighty Atom
MODEL JB-3
Schematics

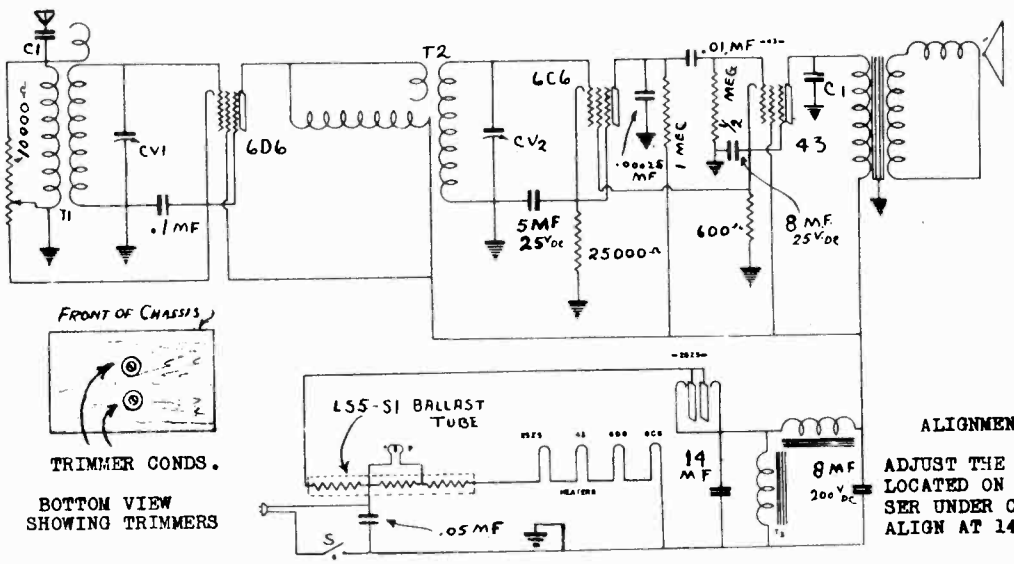
LAFAYETTE RADIO MFG. CO.

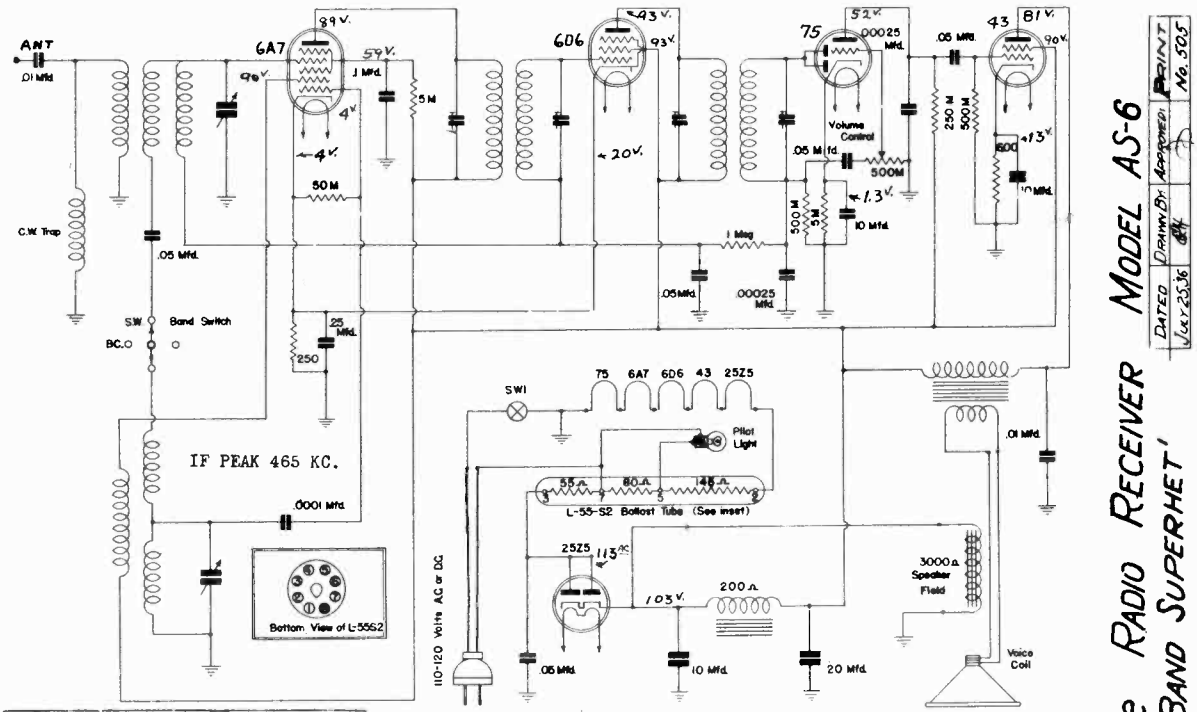


WHOLESALE RADIO SERVICE CO. INC. LAFAYETTE MODEL JB-3 TWO BAND · SEVEN TUBE · AC-DC · SUPERHET. · P.N.565

LAFAYETTE RADIO MFG. CO.

MODEL AS-6
MODEL AS-6
Schematics, Alignment
Trimmers



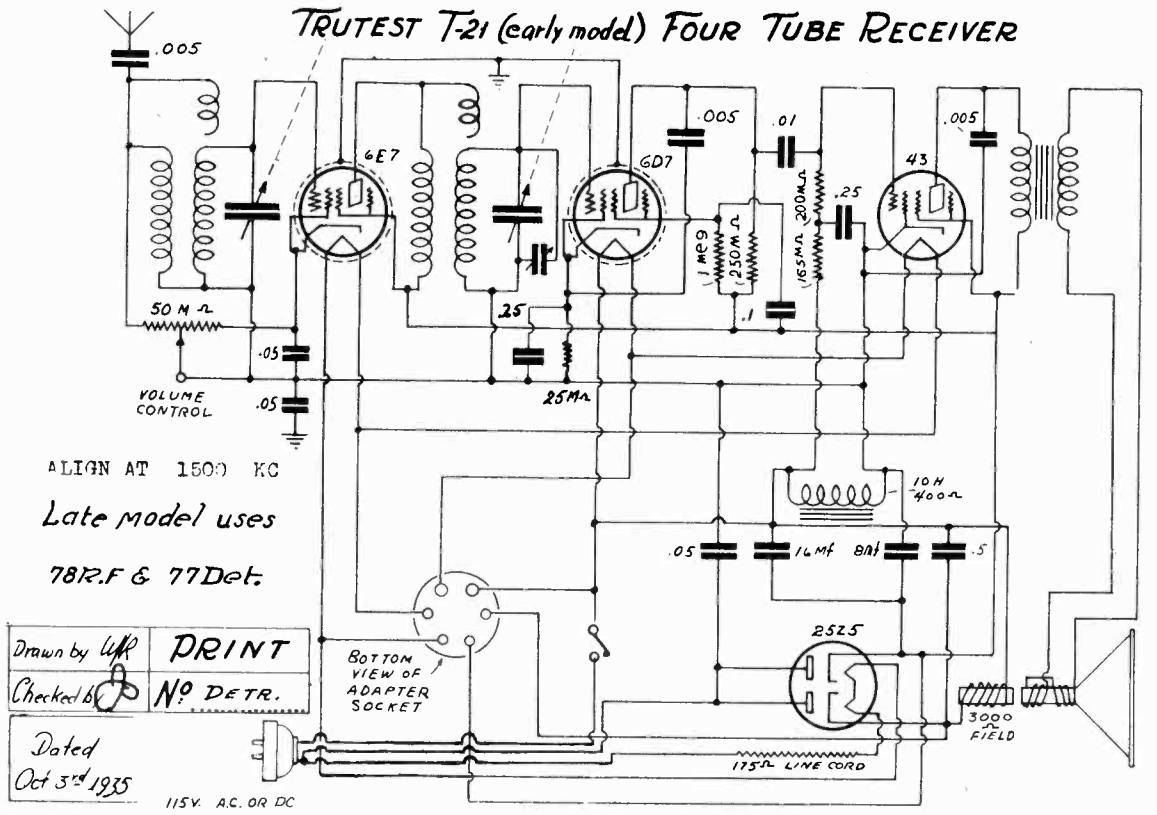


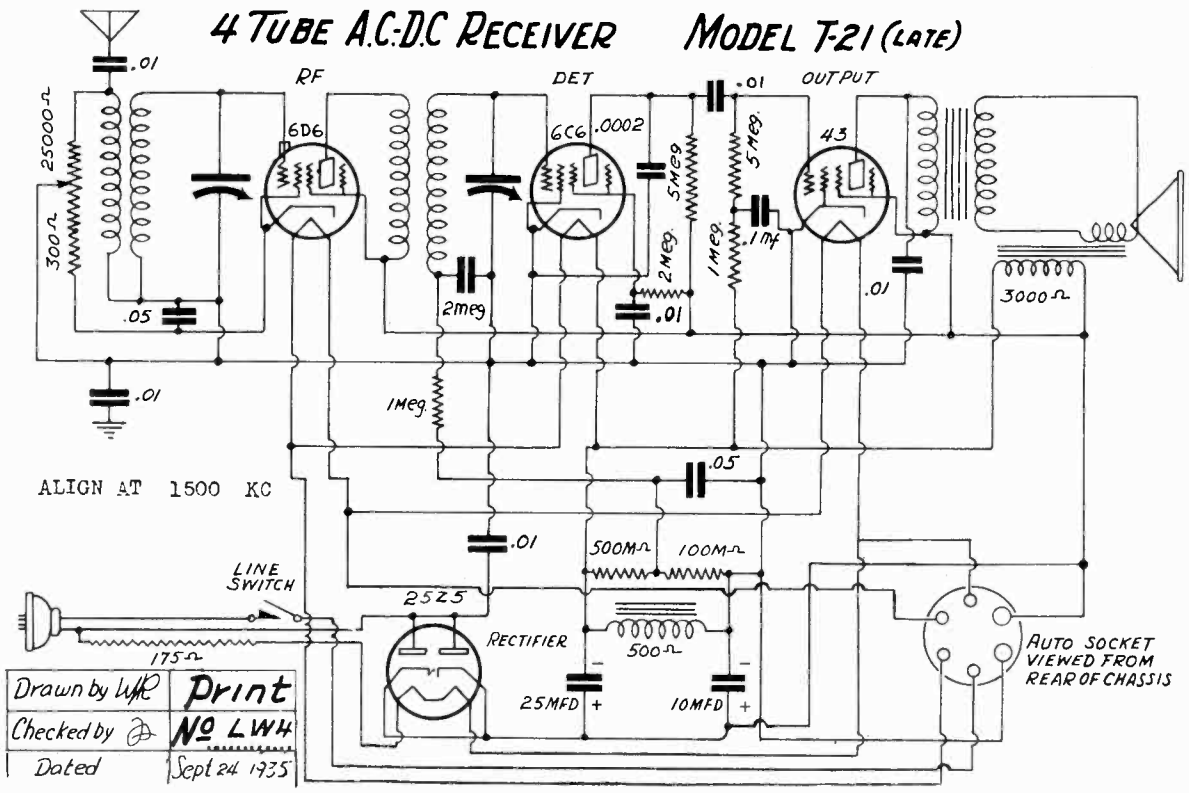
Lafayette RADIO RECEIVER MODEL AS-6
6 TUBE-2 BAND SUPERHET

PRINT No. 505
DATED Jan 25 36
DRAWN BY
APPROVED

MODEL T-21, Early
MODEL T-21, Late
Schematics

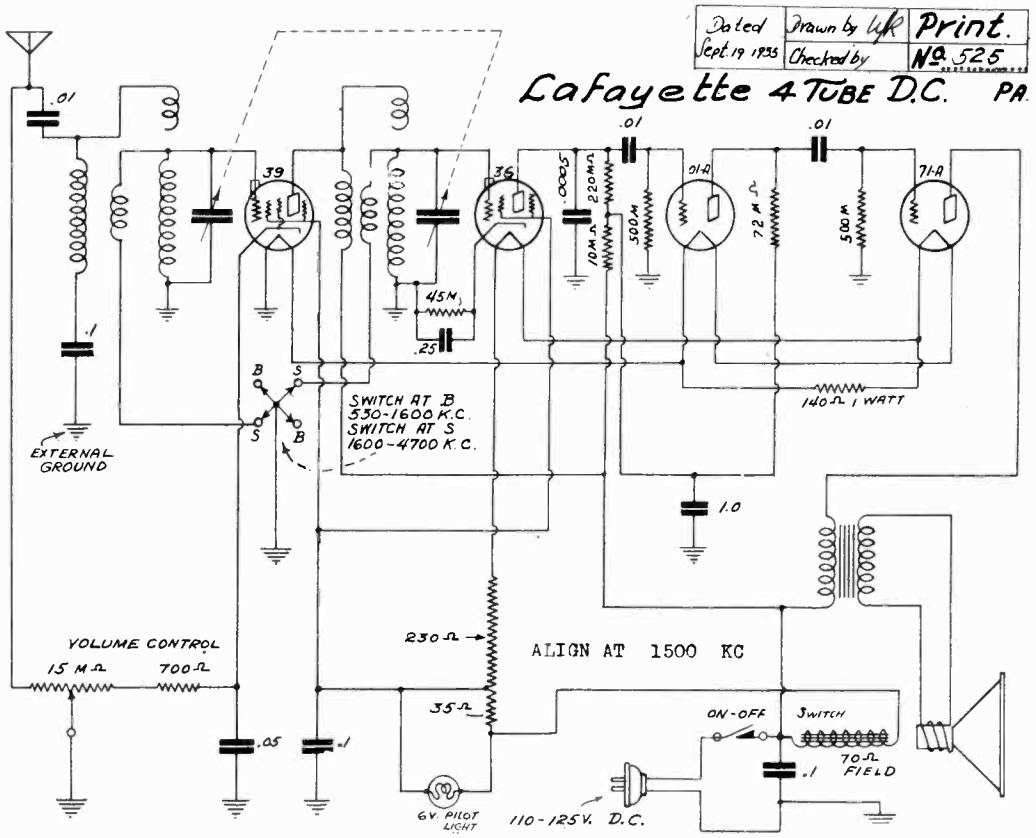
LAFAYETTE RADIO MFG. CO.





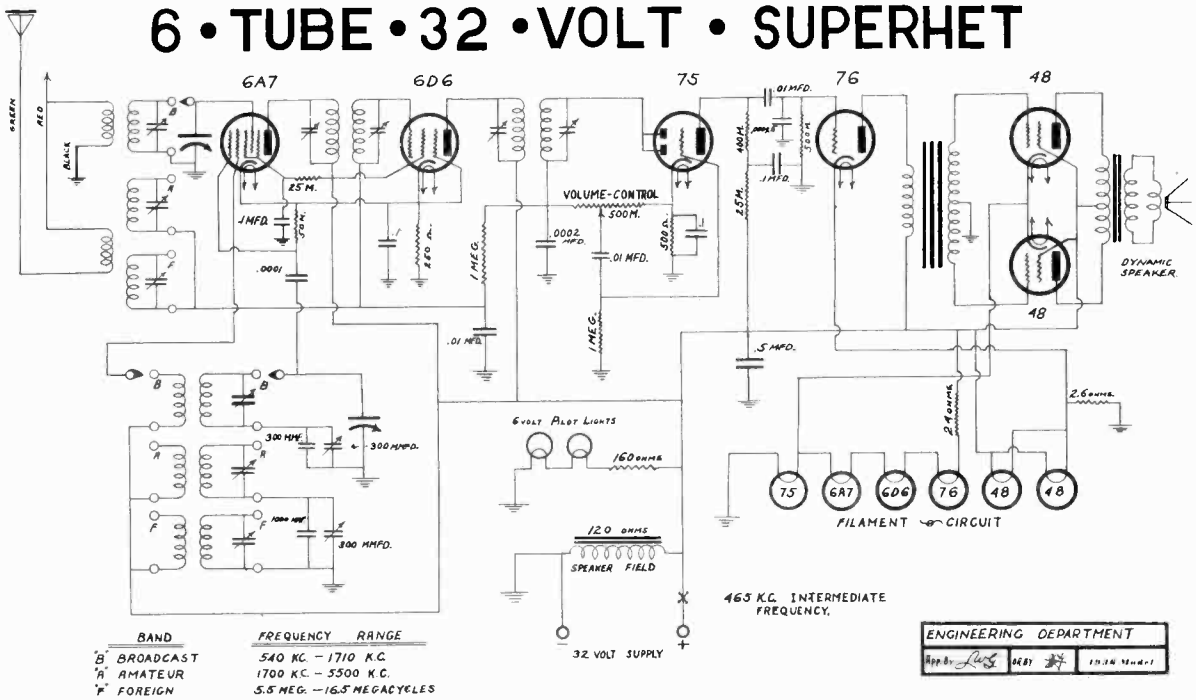
LAFAYETTE RADIO MFG. CO.

MODEL PA
MODEL M-31 (1936)
Schematics



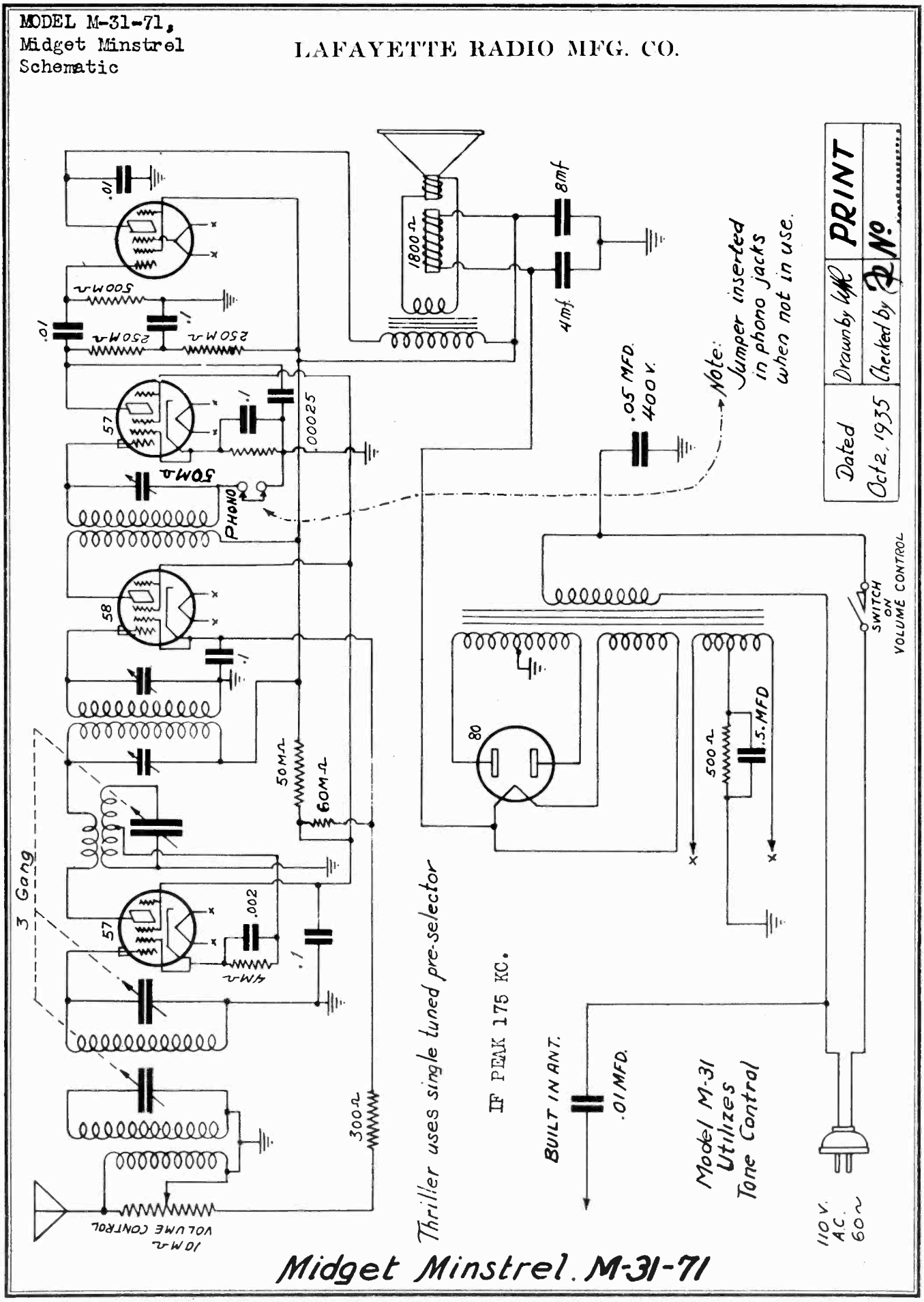
MODEL M 31 (1936)

6 • TUBE • 32 • VOLT • SUPERHET



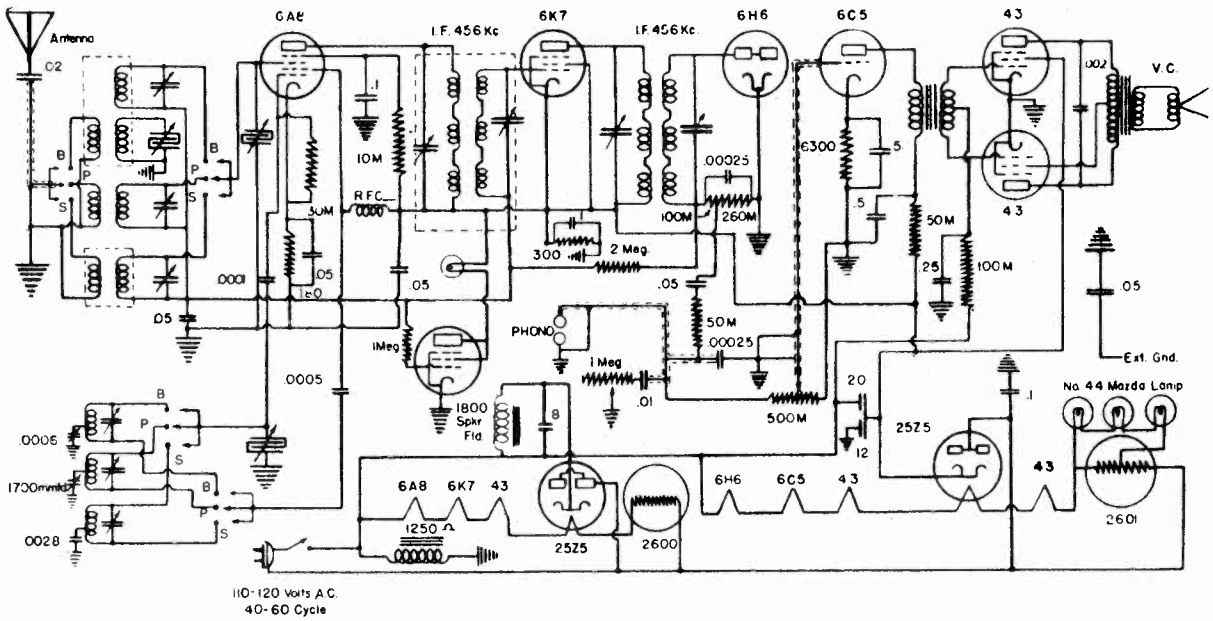
MODEL M-31-71,
Midget Minstrel
Schematic

LAFAYETTE RADIO MFG. CO.



LAFAYETTE RADIO MFG. CO.

MODELS S-61, S-62
MODEL M-99, Pigmy
Schematics

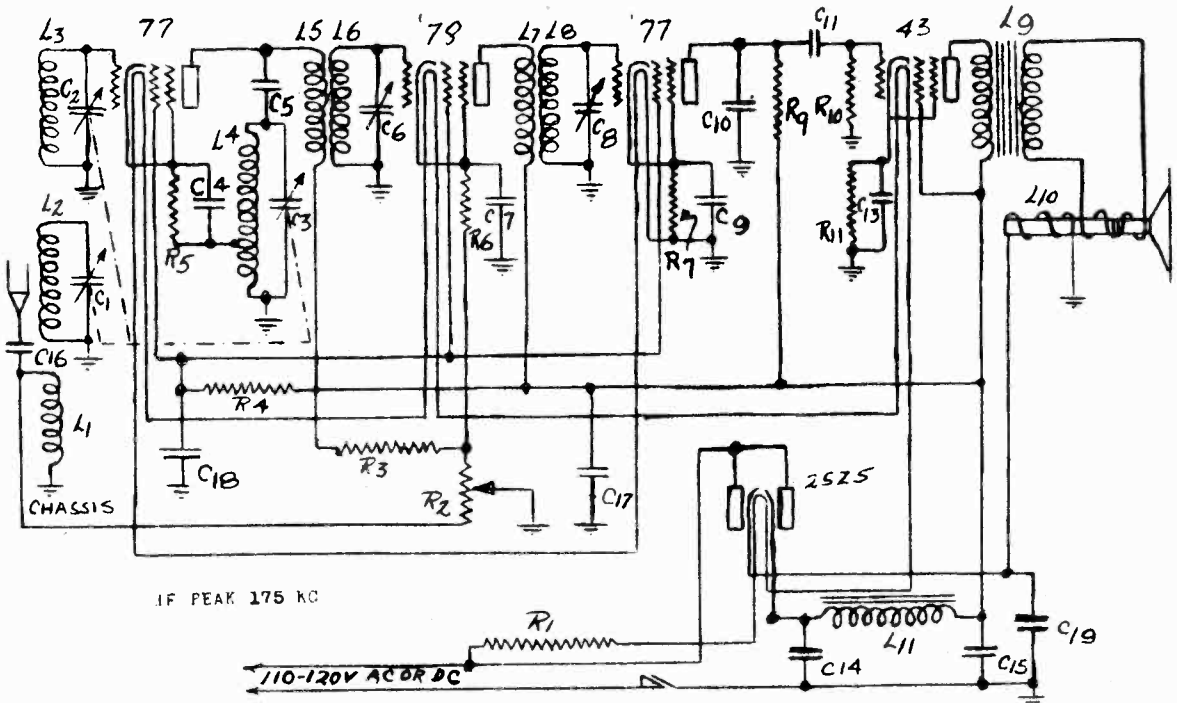


IF PEAK 456 KC.

MODEL S-62 IS IDENTICAL S61 EXCEPT FOR SUBSTITUTION OF EUROPEAN BROADCAST BAND FOR POLICE BAND.

LAFAYETTE S-61, S-62			
11 TUBE · 3 BAND · SUPERHET. RADIO RECEIVER			
Original Drawing	Corrections by	Approved by	Service Dept
			Print No.

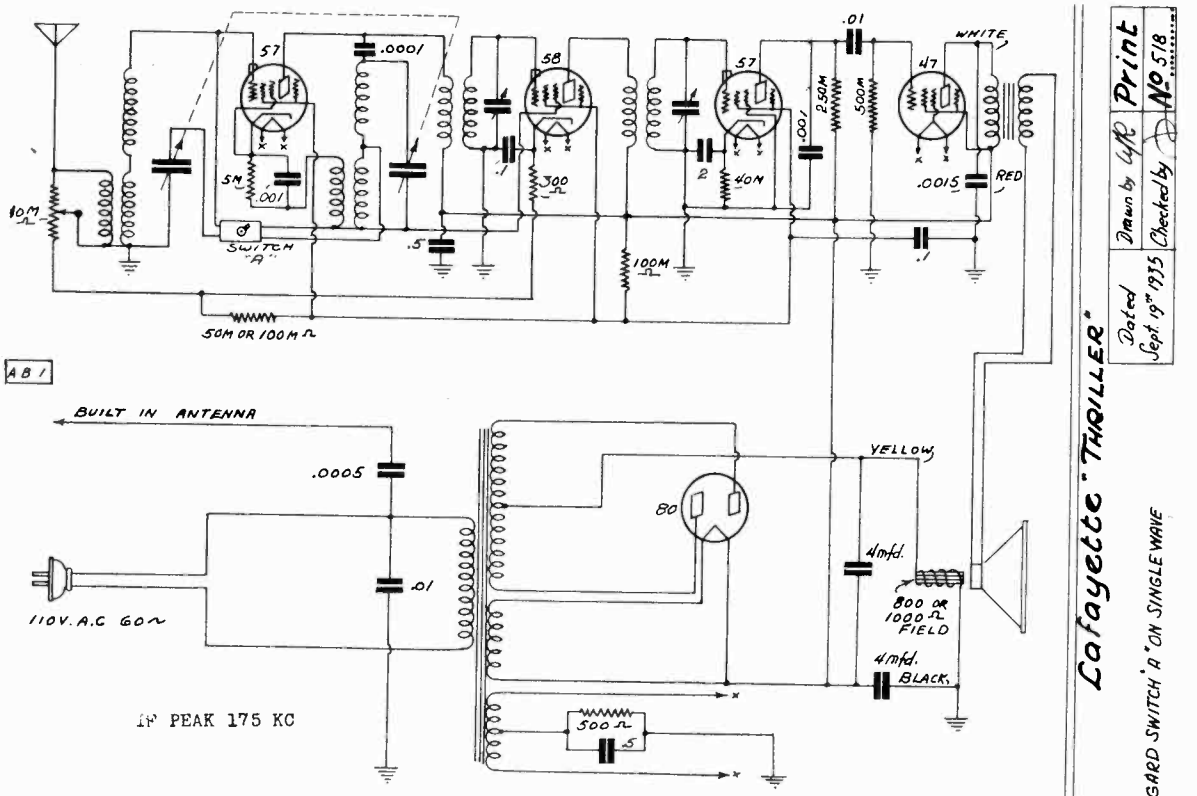
All resistance in ohms
All capacities in Mfds.



LAFAYETTE PIGMY MODEL M-99	
DRAWN BY Mishkin	CHECKED BY FLESTER
DATE SEPT-7-33	
WHOLESALE RADIO SERVICE CO. INC.	
100 SIXTH AVE	NEW YORK CITY

MODEL Thriller
MODELS C-78,C-78L
Schematics

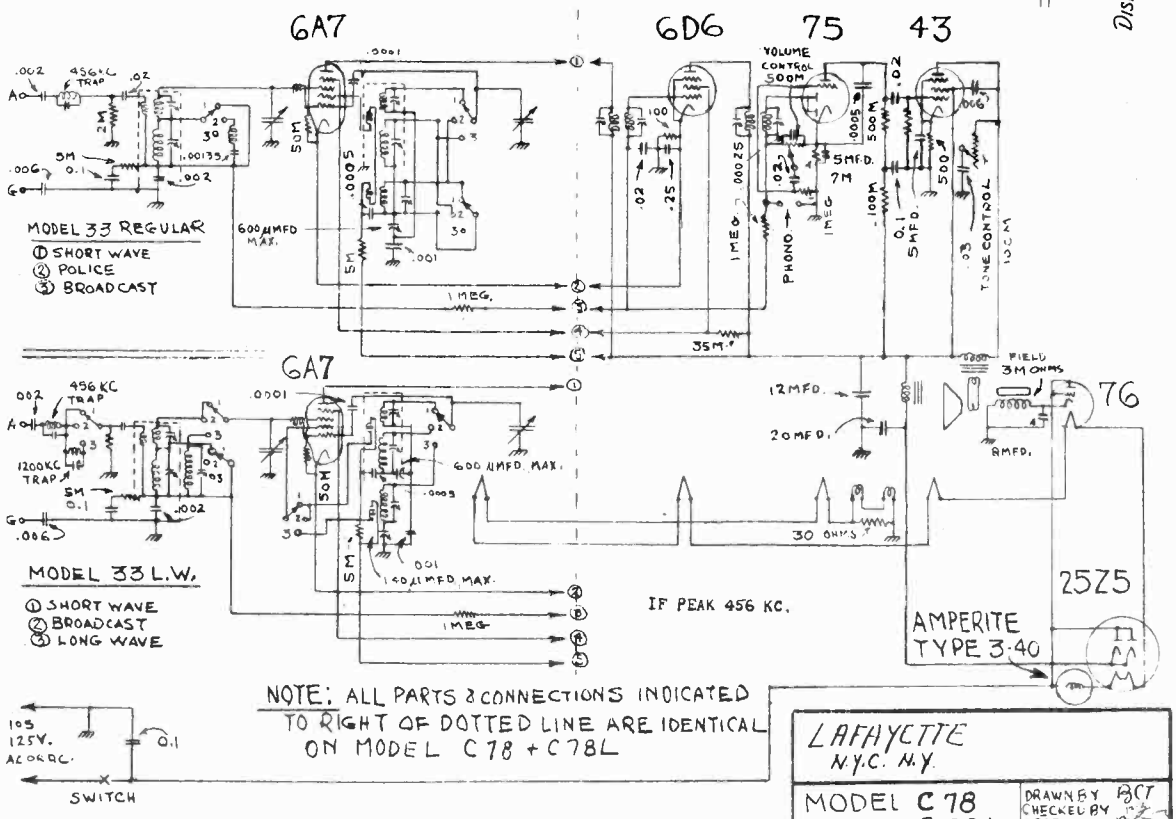
LAFAYETTE RADIO MFG. CO.



Dated Sept 19th 1935 | Drawn by [illegible] | Print | No. 518 | Checked by

Lafayette "THRILLER"

DISREGARD SWITCH "A" ON SINGLE WAVE



NOTE: ALL PARTS & CONNECTIONS INDICATED TO RIGHT OF DOTTED LINE ARE IDENTICAL ON MODEL C 78 + C 78L

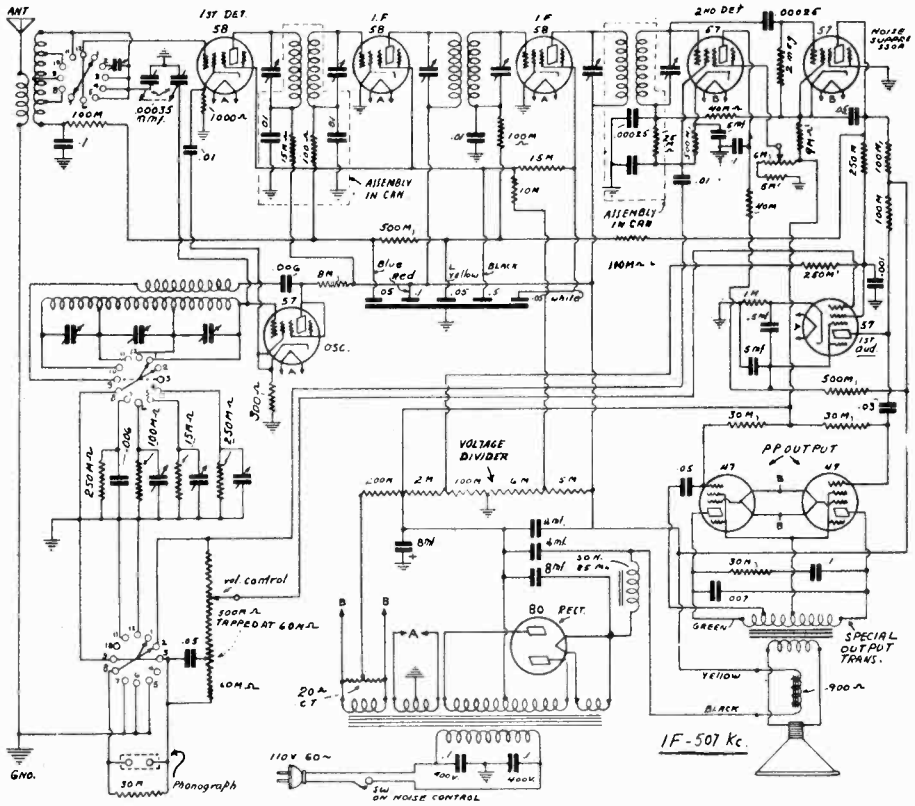
LAFAYETTE
N.Y.C. N.Y.

MODEL C 78
C 78L

DRAWN BY BCT
CHECKED BY
APPROVED
DATE 3/13/35

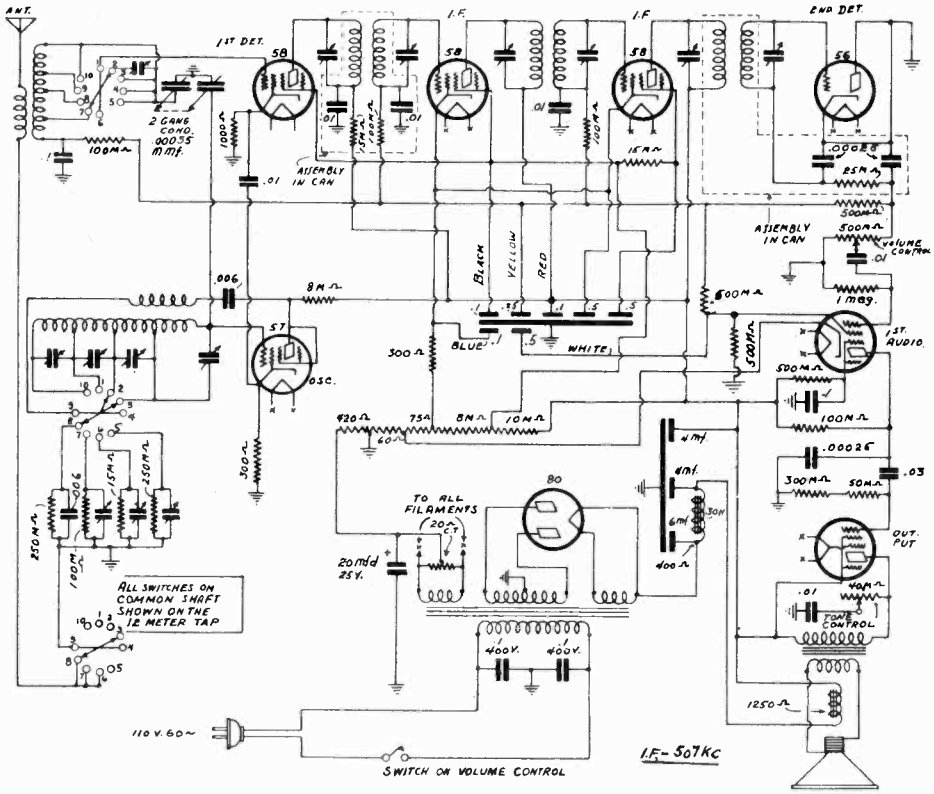
MODEL U-145
MODEL U-155
Schematics

LAFAYETTE RADIO MFG. CO.



Lafayette Dual Wave
TEN TUBE MODEL U155 A.C. SUPER-HET. 12 to 550 METERS—
FOR Dual Speaker Receiver
Voice Coils are in Parallel
Fields are in Series 450 ohms each.

Date	Drawn by	Checked by	Print No.
Sept 16th 1935			



Lafayette Model U-145 A.C.
8 TUBE SUPER-HET.
DUAL WAVE

Date	Drawn by	Checked by	Print No.
Sept. 16th 1935			-

MODEL 480
Schematic

LAFAYETTE RADIO MFG. CO.